

VIA FACSIMILE (703) 872-9306**9D-HL-20031
PATENT****Remarks**

The Office Action mailed May 18, 2004 has been carefully reviewed and the following remarks have been made in consequence thereof.

Claims 1-26 are now pending in this application. Claims 1, 2, 4, 5, 11, 15-20, and 23 are rejected. Claims 3, 6-10, 12-14, 21, 24, and 25 are objected to. Claim 22 is allowed. Claim 26 is newly added.

Independent Claim 11 has been canceled. Claims 12 and 13 are newly independent. A fee calculation sheet, along with authorization to charge a deposit account in the amount of the calculated fee, are submitted herewith.

The rejection of Claims 1, 4, 5, and 23 under 35 U.S.C. § 102(b) as being anticipated by Joslin (U.S. Pat. No. 5,555,645) is respectfully traversed.

Joslin describes a clothes dryer (10) that includes a heater (12). The heater communicates with a rotatable drum (14) for containing an article or articles to be dried. An electric motor (16) provides motive force for the drum. A temperature sensor (18) senses the temperature of air entering the drum. A blower (20) is configured to draw air through the heater, by the sensor, and into the drum before exhausting the air from the dryer. Joslin also describes that the blower provides a first flow rate in the forward direction and a second airflow rate in the second direction that is less than the first airflow rate. The sensor may cause a controller (22) to cycle the heater off and on as a temperature limit is successively exceeded and dropped below, respectively.

Accordingly, Joslin does not describe nor suggest a method of controlling the operation of a dryer that includes both a variable heat source and a variable speed blower. Rather, and in contrast to the present invention, Joslin describes a blower that operates at

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a single speed to generate a first flow rate in the forward direction and a second airflow rate in the second direction that is less than the first airflow rate. Moreover, Joslin describes a heater that cycles on and off to maintain a predetermined temperature.

Claim 1 recites "[a] method of controlling the operation of a dryer including both a variable heat source and a variable speed blower, a drum including a cavity configured to hold an article to be dried, and a first motor drivably coupled to the drum to rotate the drum, said method comprising rotating the drum; and varying only one of the variable heat source and the variable speed blower, while maintaining the other one in a fixed state."

Joslin does not describe nor suggest the method recited in Claim 1. Specifically, Joslin does not describe nor suggest a dryer that includes a drum and a motor configured to rotate the drum, and both a variable heat source and a variable speed blower. Rather, and in contrast to the present invention, Joslin describes a blower that operates at a single speed to generate a first flow rate in the forward direction and a second airflow rate in the second direction that is less than the first airflow rate. Moreover, Joslin describes a heater that operates at a single temperature and cycles on and off to maintain a predetermined temperature.

Applicants respectfully disagree with the assertion in the office action that Joslin describes a variable heat source at col. 2, lines 52-58. Rather, Joslin describes "the operation of the heater 12 by the controller 22 in this embodiment is in accordance with well-known practices in the field of domestic clothes dryers. For example, a thermostat may cycle the heater off and on as a temperature limit is successively exceeded and dropped below." Accordingly, Joslin describes a heater that operates at a fixed temperature that is cycled on/off to maintain a predetermined temperature within the dryer.

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Applicants respectfully submit that term "variable" as used in the art and described in the specification describes varying either the voltage or the current, for example, to vary either the operational temperature or rotational speed of a component. Further, a component that operates at only one speed or temperature is not variable as known and used in the art. For at least the reasons above, Claim 1 is submitted to be patentable over Joslin.

Claim 4 recites a dryer for tumble drying articles that includes "a drum comprising a cavity configured to hold articles to be dried...a first motor drivingly coupled to said drum to rotate said drum...a variable heat source in flow communication with said cavity...and a variable speed motor drivingly coupled to a blower positioned to deliver air heated by said heat source to said cavity."

Joslin does not describe nor suggest the apparatus recited in Claim 4. Specifically, Joslin does not describe nor suggest a dryer that includes both a variable heat source and a variable speed blower. Rather, and in contrast to the present invention, Joslin describes a blower that operates at a single speed to generate a first flow rate in the forward direction and a second airflow rate in the second direction that is less than the first airflow rate. Moreover, Joslin describes a heater that operates at a single temperature as known in the art, and cycles on and off to maintain a predetermined temperature. For at least the reasons above, Claim 4 is submitted to be patentable over Joslin.

Claim 5 depends from Claim 4. When the recitations of Claim 5 are considered in combination with the recitations of Claim 4, Applicants submit that dependent Claim 5 likewise is patentable over Joslin.

Claim 23 recites a dryer control system for a tumble type dryer "having a variable heat source and a variable speed blower motor driving the blower to supply air heated by

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the heat source to the dryer cavity through a cavity inlet and exhaust air from the dryer cavity through a cavity outlet, said system comprising: at least one temperature sensor positioned to sense a temperature associated with the dryer and configured to generate a temperature signal representative of the sensed temperature...and a controller operatively coupled to said at least one temperature sensor and configured to receive the temperature signals, said controller configured to control the operation at least one of the variable speed blower motor and the variable heat source in a plurality of control modes based on the received signals.”

Joslin does not describe nor suggest the apparatus recited in Claim 23. Specifically, Joslin does not describe nor suggest a dryer that includes both a variable heat source and a variable speed blower. Rather, and in contrast to the present invention, Joslin describes a blower that operates at a single speed to generate a first flow rate in the forward direction and a second airflow rate in the second direction that is less than the first airflow rate. Moreover, Joslin describes a heater that operates at a single temperature as known in the art, and cycles on and off to maintain a predetermined temperature. For at least the reasons above, Claim 23 is submitted to be patentable over Joslin.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 102 rejection of Claims 1, 4, 5, and 23 be withdrawn.

The rejection of Claims 15-20 under 35 U.S.C. 102(b) as being anticipated by Rickard (U.S. Pat. No. 4,397,101) is respectfully traversed.

Rickard describes a dryer (10) that includes a drum (16), a pair of electric heating elements (32 and 33), an inlet air temperature sensor (52), an outlet air temperature sensor (54), and a controller (60). The controller is operatively coupled with the electric heating elements, and receives temperature signals from the inlet air temperature sensor

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and the outlet air temperature sensor.

Claim 15 recites a heater control for a tumble type dryer that includes "a heater element supplying heated air to a drum comprising a cavity...at least one temperature sensor providing a signal indicative of cavity outlet temperature...and a controller operatively coupled to said heater element and said at least one temperature sensor and configured to vary at least one of a voltage and a current to said heater element based on said signal from said temperature sensor to substantially maintain a predetermined cavity outlet temperature."

Rickard does not describe nor suggest a controller configured to vary at least one of either voltage or current to the heater element based on a signal from the temperature sensor. Rather, in contrast to the present invention, Rickard describes a controller configured to only cycle on or off the heater element (see Figure 5), and from col. 9 line 67 to col. 10, line 1). Rickard's controller is configured to provide a voltage and a current to the heater element, or cut off the voltage and the current, based on the received temperature signal (col. 7, lines 17-20). Accordingly, Rickard does not describe nor suggest a controller configured to vary at least one of either voltage or current to the heater element. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Rickard.

Claims 16-20 depend from independent Claim 15. When the recitations of Claims 16-20 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 16-20 likewise are likewise patentable over Rickard.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 102 rejection of Claims 15-20 be withdrawn.

The rejection of Claims 2 and 11 under 35 U.S.C. 102(b) as being anticipated by

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Hunter et al. (U.S. Pat. No. 6,085,443) is respectfully traversed.

Hunter et al. describe a dryer (10) and method for drying small lots of product. The dryer includes at least one stationary bin (40) for holding produce, such as corn, to dry. Hunter et al. also describe that during drying, temperature and air flow rates can be varied while maintaining a given drying rate.

Claim 2 depends from Claim 1 which recites “[a] method of controlling the operation of a dryer including both a variable heat source and a variable speed blower, a drum including a cavity configured to hold an article to be dried, and a first motor drivingly coupled to the drum to rotate the drum, said method comprising rotating the drum; and varying only one of the variable heat source and the variable speed blower, while maintaining the other one in a fixed state.”

Hunter et al. do not describe nor suggest the method recited in Claim 1. Specifically, Hunter et al. do not describe nor suggest a dryer that includes both a variable heat source and a variable speed blower, a drum including a cavity configured to hold an article to be dried, and a first motor drivingly coupled to the drum to rotate the drum. Rather, and in contrast to the present invention, Hunter et al. describe a stationary bin configured such that cooled or heated air passing through the bin will dry the produce. For at least the reasons above, Claim 1 is submitted to be patentable over Hunter et al.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Hunter et al.

Claim 11 has been canceled.

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For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 102 rejection of Claims 2 and 11 be withdrawn.

Claims 3, 6-10, 12-14, 21, 24, and 25 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3 depends from Claim 1 which is submitted to be in condition for allowance. Accordingly, Applicants respectfully submit Claim 3 is in condition for allowance.

Claims 6-10 depend from Claim 4 which is submitted to be in condition for allowance. Accordingly, Applicants respectfully submit Claims 6-10 are in condition for allowance.

Claims 12 and 13 have been rewritten in independent form including all of the limitations of the base claim. Accordingly, Applicants respectfully submit Claims 12 and 13 are in condition for allowance. Claim 15 depends from Claim 12 and Claim 26 depends from Claim 13 and are therefore considered to be in condition for allowance.

Claim 21 depends from Claim 15 which is submitted to be in condition for allowance. Accordingly, Applicants respectfully submit Claim 21 is in condition for allowance.

Claims 24 and 25 depend from Claim 23 which is submitted to be in condition for allowance. Accordingly, Applicants respectfully submit Claims 24 and 25 are in condition for allowance.

For at least the reasons above, Applicants respectfully request the objection to Claims 3, 6-10, 12-14, 21, 24, and 25 be withdrawn.

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In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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